

Appl. No. 10/687,384 **BEST AVAILABLE COPY** Attorney Docket No. 10541-1868**I. Amendments to the Claims**

1. (Currently Amended) A system for providing an end of travel feedback from a road wheel to a driver of a vehicle, the vehicle including a steer by wire system, the system comprising ;

a steering wheel configured to control the steer by wire system;

a steering shaft coupled to the steering wheel; and

a clutch adapted to couple the steering shaft with the road wheel when the road wheel is in an based on an end of travel condition.

2. (Previously Presented) The system according to claim 1, further comprising a controller adapted to sense when the road wheel has reached an end of travel position based on the controller or a sensor and to engage the clutch in response thereto.

3. (Previously Presented) The system according to claim 2, wherein the controller is adapted to engage the clutch based on a road wheel angle determined by the sensor.

4. (Previously Presented) The system according to claim 2, wherein the controller is adapted to engage the clutch based on a rate of change of a road wheel angle determined based on the sensor.

5. (Previously Presented) The system according to claim 2, further comprising a motor to control an angle of the road wheel.

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6. (Currently Amended) The system according to claim 5, wherein the controller is adapted to engage the clutch based on a current draw of the motor ~~determined~~ sensed by the controller.

7. (Currently Amended) ~~The system according to claim 1, further comprising~~ A system for providing an end of travel feedback from a road wheel to a driver of a vehicle, the vehicle including a steer by wire system, the system comprising:

a steering wheel configured to control the steer by wire system;

a steering shaft coupled to the steering wheel;

a clutch adapted to couple the steering shaft with the road wheel when the road wheel is in an end of travel condition; and

a controller adapted to disengage the clutch when the steering wheel is manipulated to rotate the wheel away from the end of travel position.

8. (Previously Presented) The system according to claim 7, wherein the controller is adapted to disengage the clutch based on a steering wheel angle determined by a sensor.

9. (Previously Presented) The system according to claim 7, wherein the controller is adapted to disengage the clutch based on a rate of change of a steering wheel angle determined based on a sensor.

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10. (Previously Presented) The system according to claim 7, wherein the controller is adapted to disengage the clutch based on a torque applied to the steering wheel determined by a sensor.

11. (Previously Presented) The system according to claim 1, further comprising a controller adapted to sense when a road wheel angle is restricted due to the road wheel pushing against an object determined by the controller or a sensor.

12. (Previously Presented) The system according to claim 11, wherein the controller is adapted to engage the clutch based on a current draw of a motor configured to control the road wheel angle determined by the controller or the sensor.

13. (Previously Presented) The system according to claim 11, wherein the controller is adapted to engage the clutch based on the road wheel angle determined by the sensor.

14. (Previously Presented) The system according to claim 11, wherein the controller is adapted to engage the clutch based on a rate of change of the road wheel angle determined based on the sensor.

15. (Currently Amended) A method for providing an end of travel feedback to a driver of a vehicle, the vehicle including a steer by wire system and a road wheel, the method comprising the steps of:

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controlling the steer by wire system with a steering mechanism;  
sensing that a road wheel angle of the road wheel is at an end of travel position; and

coupling the steering mechanism to the road wheel mechanically based on the step of sensing that the road wheel angle is at an end of travel position.

16. (Original) The method according to claim 15, wherein the steering mechanism is coupled to the road wheel by engaging a clutch.

17. (Previously Presented) The method according to claim 16, wherein the clutch is engaged based on the road wheel angle.

18. (Previously Presented) The method according to claim 16, wherein the clutch is engaged based on a rate of change of the road wheel angle.

19. (Previously Presented) The method according to claim 16, further comprising the step of controlling the road wheel angle using a motor.

20. (Original) The method according to claim 19, wherein the clutch is engaged based on a current draw of the motor.

21. (Currently Amended) ~~The method according to claim 15, further comprising the step of~~ A method for providing an end of travel feedback to a driver of

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a vehicle, the vehicle including a steer by wire system and a road wheel, the method comprising the steps of:

controlling the steer by wire system with a steering mechanism;

sensing a road wheel angle of the road wheel is at an end of travel position;

coupling the steering mechanism to the road wheel mechanically and

decoupling the steering mechanism from the road wheel when the steering wheel is manipulated to rotate the wheel away from the end of travel position.

22. (Previously Presented) The method according to claim 21, wherein the steering mechanism is decoupled from the road wheel based on a steering wheel angle.

23. (Previously Presented) The method according to claim 21, wherein the steering mechanism is decoupled from the road wheel based on a rate of change of a steering wheel angle.

24. (Original) The method according to claim 21, wherein the steering mechanism is decoupled from the road wheel based on a torque applied to the steering mechanism.

25. (Previously Presented) The system according to claim 1, wherein the clutch mechanically couples the steering shaft with the road wheel through a steering linkage.

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26. (Previously Presented) The method according to claim 15, wherein the clutch mechanically couples the steering mechanism to the road wheel through a steering linkage.